

REMARKS

The Office Action dated November 30, 2004, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1 and 15 are amended to correct informalities. No new matter is added, and no new issues are raised that require further consideration and/or search. Thus, claims 1-23 are pending in the present application, and are respectfully submitted for consideration. Because claims 1 and 15 were not amended to overcome a statutory rejection, applicant submits that these claims are entitled to their full range of equivalents.

Claims 1 and 15 were objected to because of informalities. Applicant amends claims 1 and 15 to resolve the informalities. Thus, applicant submits that the objections are rendered moot.

Claims 1, 2, 4-7, 9-11, 15 and 18-23 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over applicant's admitted prior art (AAPA) in view of "Detailed Guide to Fast Ethernet" (*Johnson*), and further in view of U.S. Patent No. 5,636,140 (*Lee et al.*). The Office Action took the position that the AAPA taught all the elements of independent claims 1 and 15, except a selectable communication protocol that is controlled by the controller and that the media access controller (MAC) directly accesses the data register and is integrally coupled with the transceiver. The Office Action then alleged that *Johnson* taught these features missing from the AAPA, except

that the MAC directly accesses the data register. The Office Action then alleged that *Lee* provided those features of claims 1 and 15, and their respective dependent claims, missing from the AAPA and *Johnson*. Applicant respectfully traverses the obviousness rejection and submits that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claim 1, upon which claims 2, 4-7 and 9-11 are dependent, recites a communication device. The communication device includes a transceiver communicating data packets with a link partner according to a selectable communication protocol. The transceiver has a data register. The data register receives data representative of the selectable communication protocol. The communication device also includes a media access controller adapted for use in a packet-based communication network and operably coupled with the transceiver. The media access controller directly accesses the data register for receiving data representative of the selectable communication protocol.

Claim 15, upon which claims 18-23 are dependent, recites a communication network. The communication network includes a transceiver communicating data packets through a communication network according to a selectable communication protocol. The transceiver has a transceiver controller controlling the selectable communication protocol of the communication network and a state data register storing data representative of a state of the selectable communication protocol. The communication network also includes a media access controller, operably coupled with a

first communication system. The media access controller is integrably coupled with the transceiver. The media access controller directly accesses the state data register corresponding with the state data register in the transceiver. The communication network also includes a link partner operably coupled with a second communication system. The link partner cooperates with the transceiver controller to select the selectable communication protocol. The communication network also includes a communication channel, operably coupling the transceiver with the link partner.

As discussed in the specification, examples of the present invention allow the transceiver to communicate data packets with a link partner through a communication network according to a selectable communication protocol. These features allow for the reduction of the memory required to store addresses and to minimize the probability of an address search being missed. Thus, device pin count and system implementation costs may be reduced. Further, the number of memory accesses required for address resolution per frame and the memory addressing logic required to access applicable tables may be minimized. It is respectfully submitted that the cited references, either alone or in combination, fail to disclose or suggest all the elements of any of the presently pending claims. Therefore, the cited references fail to provide the critical and unobvious advantages discussed above.

The AAPA relates to a prior art device employing multiple link partner capability registers per a media access controller/transceiver pair. The Office Action cites Figure 10 as showing these aspects. The AAPA describes a configuration in which MAC 100 and

PHY 120 communicate link partner capability data to each other by way of microprocessor 110. Microprocessor management interface 104 is used to transfer the link partner capability data 112 and link partner capability register 106 between flow control functions 102 of MAC 100 and microprocessor 110. Microprocessor 110 bi-directionally communicates with serial management interface controller 122. Controller 122 places the link capability data via link partner capability register 124.

Johnson relates to a fast Ethernet. *Johnson* describes a management interface on transceivers embedded on an adapter card. The management interface includes a two-wire serial control bus. Using the management interface, an adapter card gathers status from a transceiver and controls the transceiver. *Johnson* also describes a dual transceiver configuration that includes an embedded transceiver. The management interface specifies a set of 32 registers divided into four groups. Each register holds 16 bits. The management interface allows the management entity to read and write to the registers.

Lee relates to a system and method for a flexible MAC layer interface in a wireless local area network (LAN). *Lee* describes a MAC interface that operates with radios that fail to incorporate all transceiver functionality and with radios that do incorporate all transceiver functionality. MAC device 32 of *Lee* communicates with the radio, or PHY device, using a processor 36 and a transceiver interface 38 along with four transmit and receive modes. Transceiver interface 38 provides signal pins to connect MAC device 32 directly to radio 34. MAC device 32 includes a static random access memory (SRAM) 60 for storing user data, and a flash random access memory (RAM) 62 for storing system

programs. Transceiver interface 38 includes a register set 64, a transmit first-in first-out (FIFO) queue 66, a receive FIFO queue 68, a state machine 70, a parallel-to-serial shift-register 72, a serial FIFO queue 74, and a serial-to-parallel shift-register 75. State machine 70 controls the timing and the signaling on MAC device 32. The functionality of state machine 70 is dependent on the settings of register set 64. Processor 36 places state machine 70 in a particular transmit and receive mode by initializing register set 64, including bits 76 and 78, to set the mode.

Applicant submits that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims. For example, the cited references do not disclose or suggest “the media access controller directly accessing the data register for receiving data representative of the selectable communication protocol,” as recited in claim 1, or “the MAC directly accessing the state data register corresponding with the state data register in the PHY,” as recited in claim 15. Applicant respectfully submits that the cited references, either alone or in combination, do not disclose or suggest at least these features of the presently pending claims.

Applicant submits that the AAPA, *Johnson* and *Lee* do not disclose or suggest all the features of the pending claims. As stated in the Office Action, the AAPA and *Johnson* do not disclose or suggest directly accessing a data register with the PHY, or transceiver, for receiving data representative of a selectable communication protocol. Applicant submits that *Lee* does not disclose or suggest these patentable features. *Lee*

describes processor 36 initializing register set 64. This aspect of *Lee* does not disclose or suggest accessing a data register for receiving data representative of a selectable communication protocol.

Further, *Lee* describes register set 64 as being in transceiver interface 38, and not within radio 34. Because transceiver interface 38 is not in radio 34, applicant submits that register set 64 is not within a transceiver, as recited in the claims. In fact, *Lee* describes transceiver interface 38 as providing data buffering between processor 36 and radio 34. MAC device 32 includes transceiver interface 38. Thus, MAC device 32 does not access data registers on radio 34. Applicant submits that *Lee*, alone or in combination with the AAPA and *Johnson*, does not disclose or suggest the media access controller directly accessing a data register for receiving data representative of a selectable communication protocol, as discussed above.

Applicant also submits that the claims depending from independent claims 1 and 15 also are not disclosed or suggested by the cited references, either alone or in combination. The dependent claims recite the patentable features of independent claims 1 and 15, and also recite additional patentable subject matter. In addition, if an independent claim is nonobvious under 35 U.S.C. § 103, then any claim dependent therefrom also is nonobvious. MPEP 2143.03. Thus, the cited references, either alone or in combination, do not disclose or suggest all the features of claims 1, 2, 4-7, 9-11, 15 and 18-23, at least for the reasons given above. Applicant respectfully requests that the obviousness rejection of these claims be withdrawn.

Claims 3, 8, 12-14, 16 and 17 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the AAPA in view of *Johnson*, further in view of *Lee*, and further in view of U.S. Patent No. 5,809,026 (Wong et al.). The Office Action took the position that the AAPA, *Johnson* and *Lee* taught all the elements of these claims except that “the PHY and MAC are integrated on a monolithic VLSI component.” *Wong* was cited as providing these elements missing from the AAPA, *Johnson* and *Lee*. Applicant respectfully traverses the obviousness rejection and submits that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claims 3, 8 and 12-14 depend directly or indirectly from independent claim 1. Claim 1 is summarized above. Thus, claims 3, 8 and 12-14 recite the patentable features of claim 1, as discussed above.

Claims 16 and 17 depend directly or indirectly from independent claim 15. Claim 15 is summarized above. Thus, claims 16 and 17 recite the patentable features of claim 15, as discussed above.

Wong relates to a multi-port network interface. *Wong* describes the multi-port network device coupled to a transmit data bus and configured to transmit data to a physical layer. A receiver of *Wong* is configured to place data, received from the physical layer, on the received data bus for transmission to the network layer by the MAC and the PLS circuit. The MAC and PLS circuit of *Wong* is configured to place data on the transmit data bus for transmission to the physical layer by a transmitter.

Applicant submits that *Wong* does not disclose or suggest those features of the claims missing from the AAPA, *Johnson* and *Lee*, as discussed above with reference to claims 1 and 15. Specifically, *Wong*, alone or in combination with the AAPA, *Johnson* and *Lee*, does not disclose or suggest “the media access controller directly accessing the data register for receiving data representative of the selectable communication protocol,” as recited in claim 1, or “the MAC directly accessing the state data register corresponding with the state data register in the PHY,” as recited in claim 15. Applicant respectfully submits that the cited references, either alone or in combination, do not disclose or suggest at least these features of the presently pending claims.

Wong describes a receiver placing data on a data bus for transmission to the network layer by the MAC and PLS circuit. This aspect of *Wong* does not disclose or suggest accessing a register for receiving data representative of the selectable communication protocol. Because *Wong* does not disclose or suggest those features of the claims missing from the AAPA, *Johnson* and *Lee*, the cited references, either alone or in combination, do not disclose or suggest all the features of the presently pending claims.

Further, claims 3, 8, 12-14, 16 and 17 depend directly or indirectly from independent claims 1 and 15, and recite at least the patentable features of the independent claims discussed above. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim dependent therefrom also is nonobvious. MPEP 2143.03. Thus, claims 3, 8, 12-14, 16 and 17 are allowable over the cited references for at least these reasons.

Applicant respectfully requests that the obviousness rejection of claims 3, 8, 12-14, 16 and 17 be withdrawn.

It is further submitted that each of claims 1-23 recite subject matter that is neither disclosed nor suggested by the cited references, either alone or in combination. It is therefore respectfully requested that all of claims 1-23 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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